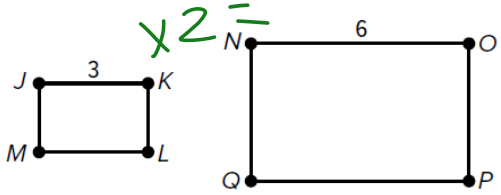
Module 8 Similarity

Sunday, April 2, 2023 5:41 PM

1. Use the figure to complete the statement.



The transformation from rectangle *JKLM* to rectangle *NOPQ* is a(n)

[A. enlargement B. reduction]

with a scale factor of

[A. 0.5 B. 2 C. 3].

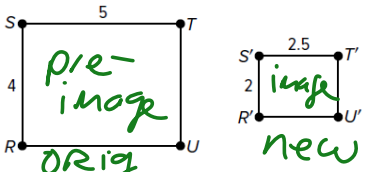
2.) . If the point $P(4,6)$ is dilated with a center of dilation at the origin and $k = \frac{3}{2}$ then where is P'?

(6, 9) 4 x 1.5 = 6, 6 x 1.5 = 9 — 1.5 Scale factor

3.) . If after a dilation T' is at $(-4, 28)$ and T was at $(-1, 7)$ then what was the value of k?

4 — new — original — * Scale factor

4. A dilation maps rectangle *RSTU* onto rectangle *R'S'T'U'*.



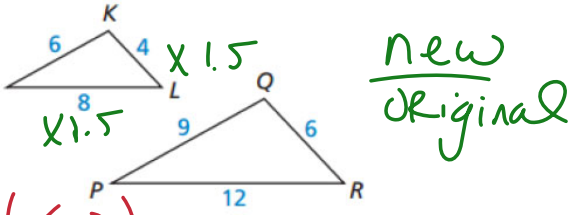
What is the similarity ratio of the dilation?

A. $\frac{1}{2}$ C. $\frac{5}{4}$

B. 2 D. $\frac{4}{5}$

Refer to the figure at the right.
Write your answer in simplified fraction form.

5. Find the scale factor of ΔJKL to ΔPQR.



1.5 $\frac{9}{6}$ $\frac{3}{2}$ X 1.5 X1.5 new / original

6. Find the ratio of the areas of ΔJKL to ΔPQR.

$\frac{9}{4}$ $\left(\frac{3}{2}\right)^2$ or $(1.5)^2$ 2.25

area = squared (n^2)
Volume = cubed (n^3)

Refer to the diagram at the right.

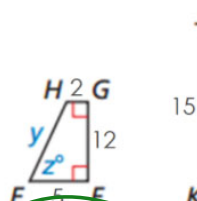
7. Find the value of x.

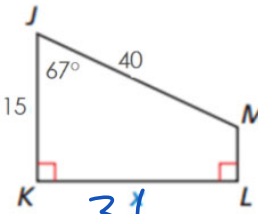
$\frac{x}{12} = \frac{15}{5}$

part B. Find y

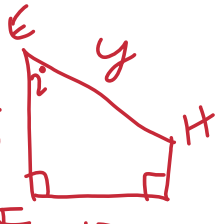
8. Find the value of z.

67°





$\frac{5x}{5} = \frac{180}{5}$ x = 36



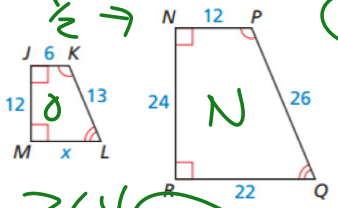
$\frac{y}{40} = \frac{12}{36}$

$\frac{36y}{36} = \frac{480}{36} = 13\frac{1}{3}$

22 = 2

Each pair of polygons are similar. Find the value of the missing variable.

9.

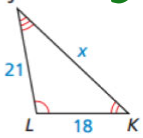


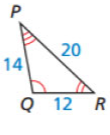
New / Orig. 11 ½ →

$\frac{x}{22} = \frac{12}{24}$

$\frac{24x}{24} = \frac{264}{24} = 11$

10.





14/21 2/3

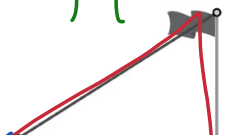
$\frac{21}{14} = \frac{x}{20}$

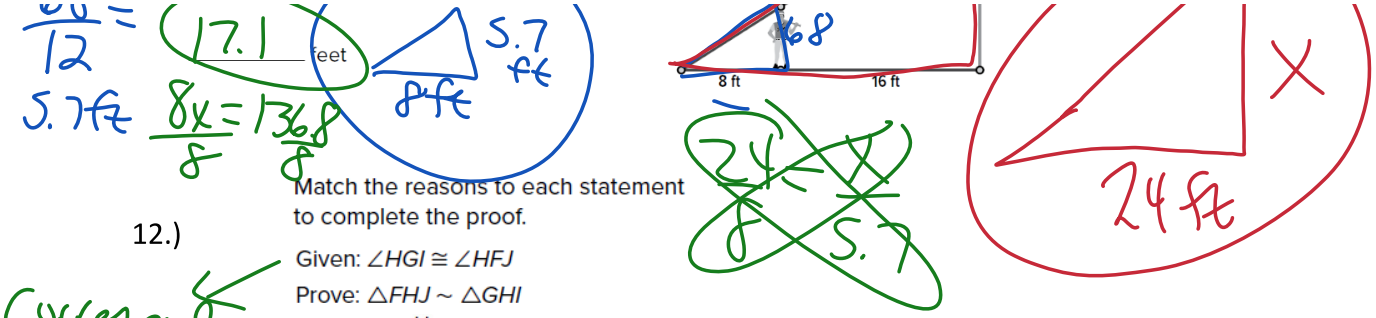
$\frac{14x}{14} = \frac{420}{14}$

x = 30

11.) **SHADOWS** Jeremy stands so that his shadow and the shadow cast by a flag pole end at the same point. If Jeremy is exactly 68 inches tall, what is the height of the flagpole in feet?

68

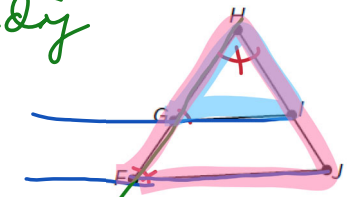




12.) Match the reasons to each statement to complete the proof.

Given: $\angle HGI \cong \angle HFJ$

Prove: $\triangle FHJ \sim \triangle GHI$



Statements	Reasons
1. $\angle HGI \cong \angle HFJ$	1. Given
2. $\angle GHI \cong \angle FHJ$	2. Reflexive
3. $\triangle FHJ \sim \triangle GHI$	3. AA

A. Third Angles Theorem

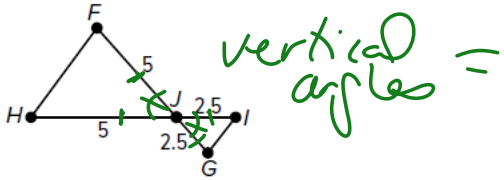
B. Transitive Property of Congruence

C. Given

D. AA Similarity Postulate

E. Reflexive Property of Congruence

13.) Which reason proves that $\triangle FHJ \sim \triangle GIJ$?



vertical angles =

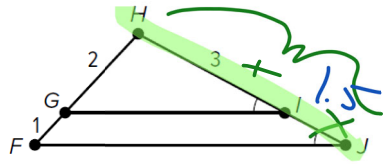
A. AA Similarity Postulate

B. SAS Similarity Theorem

C. SSS Similarity Theorem

C. SSS Similarity Theorem

14.) What is the length of $\overline{HJ}$?



$\frac{x}{1} = \frac{3}{2}$

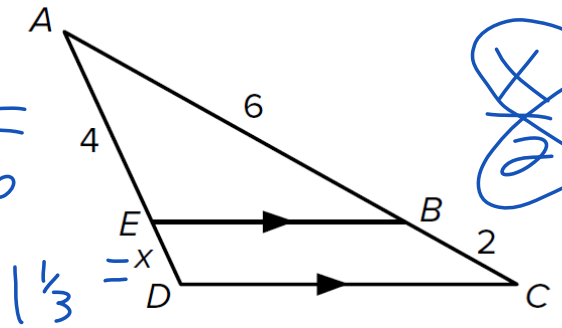
$\frac{x}{3} = \frac{1}{2}$

$\frac{2x}{2} = \frac{3}{2}$

$x = 1.5$

$HJ =$ 4.5

15. Find the value of x.



$\frac{x}{4} = \frac{2}{6}$

$1\frac{1}{3} = x$

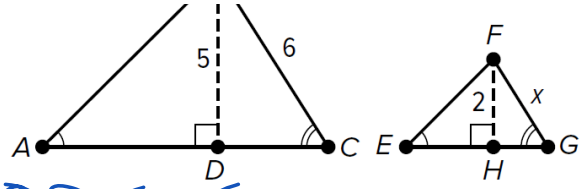
$\frac{x}{2} = \frac{4}{6}$

$\frac{6x}{6} = \frac{8}{6}$

$x = 1\frac{2}{6}$

$1\frac{1}{3}$

16.) Which equation can be used to find the value of x?



A. $\frac{x}{6} = \frac{2}{5}$

B. $\frac{x}{6} = \frac{5}{2}$

C. $\frac{x}{5} = \frac{6}{2}$

D. $\frac{x}{5} = \frac{2}{6}$

$\frac{5x}{5} = \frac{12}{5}$

$x = 2.4$

1